



11th Annual MLTI Student Conference
May 22, 2014
University of Maine



Block 1 Student Workshop Sessions

9:20 AM - 10:40 AM

Block 2 Student Workshop Sessions

10:50 AM - 12:10 PM

Various Campus Locations

Hour of Code: How One School Participated and Your Entry into Coding Presenter: Mike Arsenault, Yarmouth School Department **Platform(s):** HP ProBook, Apple iPad, Apple MacBook Air
Location: D.P. Corbett, Room 100

Come learn how Frank Harrison Middle School in Yarmouth participated in the Hour of Code project and start your journey into coding. This session will begin with a brief presentation on how Frank Harrison Middle School partnered with local businesses to bring coding professionals into our school to mentor our students during the Hour of Code. After the short presentation, participants will complete an hour of coding activities using the resources provided on the Hour of Code web site. Whether you've never done any coding before or have done some coding you'll have resources that can be used to develop new coding skills.

Software/Downloads: A web browser.

The following applications require an install *but will not* be necessary to participate in this session: Alice, LiveCode, Looking Glass, Hopscotch (iOS), Code Academy (iOS), MIT App Inventor (Android), Lightbot (iOS or Android)

Tynker - Programming with Logic Presenter: Sean Malone, RSU #68 **Platform(s):** HP ProBook, Apple iPad, Apple MacBook Air

Location: Bennett Hall, Room 141

Tynker is the answer to those who love the Scratch programming language but want to enter the third dimension. Tynker is platform friendly ranging from iOS & OSX to Windows. The possibilities of Tynker allow the programmer to build a program from scratch or complete challenges for all to take part in. No skill level is necessary so if you are just beginning in the programming world to the coding master; there is something for everyone.

Software/Downloads: Tynker (free) can be downloaded from tynker.com or as an iPad app

Learning to Code With Python Presenter: Michael Murphy, John Bapst Memorial High School
Platform(s): HP ProBook, Apple MacBook Air

Location: Barrows Hall, Room 119

In this session, participants will learn basic algorithms and produce a number of simple programs using the python programming language. This is a great language for introductory programming learners, because of the short time it takes to get a whole program functioning. Students will learn how to create both interactive programs and how to build self-contained mathematical algorithms. The session will touch on, loops, counters, (pseudo)randomization, conditional feedback and text line parsing/interpretation.

Software/Downloads: Python 2.xxx (free download)

Programming the NXT Robot for Immediate Success! Presenter: Tom Bickford, Maine Robotics
Platform(s): HP ProBook, Apple iPad, Apple MacBook Air

Location: Jenness Hall, Room 100

Programming in only three letters... FUN! Learn how to use computer programming to run a LEGO robot around the room; use LOOPS, CONDITIONAL STATEMENTS, and SWITCHES to sense the robots environment and change it's behavior; all from a program that YOU write.

You'll be a programmer in just a few minutes and downloading to the robots in a few more. Then spend the rest of the session adding skills to get your robot to do more interesting and complex tasks! You might ask "What can it do?" only to find out it can do whatever you want it to do.

Software/Downloads: Any device that has the LEGO MindStorms software installed will be able to participate using their device. HOWEVER, we will also have a number of Windows machines in the room for student use.

Games in Java & Animation in Scratch Presenter: Nola Urban, Westbrook Middle School
Platform(s): HP ProBook, Apple MacBook Air

Location: Barrows Hall, Room 130

We plan to use Java to show how one might design a game and publish it using Eclipse so that others may also play the game. We also plan to show how one might use Scratch to animate and to code music to accompany the animation.

Software/Downloads: Scratch (free download - <http://scratch.mit.edu/scratch2download/>) and Eclipse (free download - <https://www.eclipse.org/downloads/>)

Creating a Fun Student Project on Kodu Presenter: Michael Cummings and Keith Partington, Microsoft Corporation
Platform(s): HP ProBook

Location: Boardman Hall, Room 310

Kodu lets kids create games on the PC and Xbox via a simple visual programming language. Kodu can be used to teach creativity, problem solving, storytelling, as well as programming. Anyone can use Kodu to make a game, young children as well as adults with no design or programming skills. This

session will provide an overview and demonstration of the Kodu platform. A sample project will be shared to provide an example for students to get started on their own fun project.

Software/Downloads: Kodu (free download)

An Hour of Code ... and Beyond Presenter: Jay Collier, Educate Maine **Platform(s):** HP ProBook, Apple MacBook Air

Block 1 Only!

Location: Little Hall, Room 120

Have you finished an Hour of Code? Two hours? More? Come join us and share your favorite games and tutorials with other students and see some you may not have tried yet. In this workshop, we'll show about 20 minutes of cool demos from Code.org, Robomind, Grok Learning, Make Games With Us, Touch Develop, App Inventor, Codecademy, and Processing. Then, we'll have time for you to show and tell the games you like best. After, we'll have free time to explore. Be sure to bring the coding projects you love the most.

Software/Downloads: Web Browser, Scratch (free download - <http://scratch.mit.edu/scratch2download/>)

Weaving the Web: Creating Your Own Webpages! Presenter: Laura Gurney, Husson University **Platform(s):** HP ProBook, Apple MacBook Air

Block 2 Only!

Location: Little Hall, room 120

The "Web" has become an important part of life. Don't believe it? Try being disconnected for a few days! Sites such as Facebook, Amazon, Google, among others, offer users communication, entrainment, and knowledge. Creating your own online presence is easier than you think. Explore basic HTML and CSS markup to create webpages and JavaScript to add interactivity.

Software/Downloads: Web Browsers (Chrome or Firefox) and Text Editor (Textwrangler (Mac), NotePad++ (Windows))

Learn To Program in Python By Teaching Toddlers How To Use Microwaves Presenter: Josh Komusin, UNUM **Platform(s):** HP ProBook, Apple MacBook Air

Location: D.P. Corbett, Room 105

Programming is all about getting computers to do cool, useful things. The only problem is, computers have no idea what is "cool", or what is "useful". So how can we tell them to do those things? Well, it turns out that it's pretty simple: computers are basically perfectly-behaved toddlers with photographic memories. So let's find out how to put them to work!

This workshop will show you how to break a task down into simple pieces, and then build useful solutions from those building blocks in the Python programming language. With that, you'll have the knowledge you need to create useful tools for services and web sites you use every day!

Software/Downloads: PyCharm (the free Community edition), however any Python IDE or editor will

work.

Working with Lua [In Computercraft] Presenter: Stephen Kaplan, Marshwood Middle School - Coding After School **Platform(s):** HP ProBook, Apple MacBook Air

Block 1 Only!

Location: Boardman Hall, Room 210

In this workshop, we'll be starting with the very basics of Lua and working our way to creating great and useful programs. We'll be learning about Lua and why it is a useful coding language, conditional statements (If/else), input and output codes, functions, colors, loops, and more. Join us as we embark into the coding language of Lua!

Software/Downloads: Love 2D (<https://love2d.org>) and CCEmulator (<https://github.com/Sorroko/cclite/releases/tag/1.0.0>)

Writing cyphers with Java Presenter: Edward Sihler, University of Southern Maine **Platform(s):** HP ProBook, Apple MacBook Air

Location: Murray Hall, Room 106

Create a cypher machine in JAVA, how to break mon-alphabetic substitution cyphers. Learn the basics of an WWII style encoding machine and how these machines were part of the world of computers we have today.

Software/Downloads: Java compiler

Using Scratch to Solve Real-World Problems Presenter: Elizabeth Chabe, High Touch Courses **Platform(s):** HP ProBook, Apple MacBook Air

Location: Bennett Hall, Room 140

Designed for students with no prior coding experience, this workshop starts with demonstrating live examples of how programming can solve real-world problems. Working in small groups paired with a rockstar coding mentor, we quickly get to work solving our own real-world problems inspired by the fields of health care, cryptography, and forensics. Students leave the session with the start of a Scratch-based application that solves an assigned problem.

Software/Downloads: Scratch (free download - <http://scratch.mit.edu/scratch2download/>), web browser

Hacker Club Presenter: Benjamin Schrader & Garrett Wilkin, Hacktivate **Platform(s):** HP ProBook, Apple iPad, Apple MacBook Air

Location: Bennett Hall, Room 137

Experience hands-on electronics and practical programming. Meet the Maine Hacker Club. Bring your projects or interests and be ready to share with others in small groups. Expect good questions. Ask

good questions. Listen. Inspire, and be inspired. Includes a mini-hackathon. Challenges will be announced. Tools and supplies will be provided. You may collaborate together, work independently, or just watch and learn from others' solutions.

Software/Downloads: Arduino software is recommended but not required.

An Introduction to Javascript Presenter: Gerald Wright, Husson University **Platform(s):** HP ProBook, Apple MacBook Air

Block 1 Only!

Location: D.P. Corbett, Room 115

This workshop uses the Code Academy JavaScript tutorials to introduce students to the basic building blocks of writing software. Topics covered include functions, looping and control structures, and how to fight a dragon.

Software/Downloads: Web browser

Coding in Codea Presenter: Gerald Wright, Husson University **Platform(s):** Apple iPad

Block 2 Only!

Location: D.P. Corbett, Room 115

Have you ever looked at an app on the iPad and wondered how they did that? Have you ever thought that you had the perfect app for the iPad? Do you just want to learn more about building apps for the iPad?

Codea lets you create games and so much more for the iPad. If you can think it, then you can create it. Changing colors, graphics, sounds and more is only a touch away using the Codea editor.

Software/Downloads: Codea license

Programming Fun with Code.org Presenter: Michele Charette, Medway Middle

School **Platform(s):** HP ProBook, Apple iPad, Apple MacBook Air

Location: Neville Hall, Room 100

Whether you want to spend an hour working with code or twenty hours, we have a program for you. Come dabble in code and learn some basic skills that will take you further. Teachers can set up accounts for students and be able to monitor their progress as they work through the course.

Software/Downloads: n/a

An introduction to Computer Programming in Minecraft Presenter: Jeff Mao, Department of Education **Platform(s):** Apple MacBook Air, HP ProBook

Location: Neville Hall, Room 101

Thousands of people are creating and exploring in the world of Minecraft. Did you know that with a simple mod pack, ComputerCraft, that you can build computers and robots (called turtles) in

Minecraft? Using programs that you write for these computers and turtles, you can expand what is possible in Minecraft. This session is for the newbie computer programmer or the Minecraft veteran that has not yet tried the ComputerCraft mod.

Software/Downloads: Attendees of this session must have an existing Minecraft account.

Codea

Presenter: Chris Wilson, University of Maine

Platform(s): Apple iPad

Location: Murray Hall, Room 102

Come learn about programming on the iPad with Codea. Students will learn how to create their very own application for the iPad. No previous programming experience is needed. Students will learn how to get started as well as do some drawing to the screen.

Software/Downloads: Bring a keyboard if you have one!

Supercomputing and Cloud Computing

Presenters: Sam Winchenbach & Steve Cousins, University of Maine

Block 1 Only!

Platform(s): Apple iPad, Apple MacBook Air, HP ProBook

Location: Little Hall, Room 140

You've heard the expression "Cloud Computing" or "It's in the Cloud"...come see what that is all about. This session is being led by University of Maine experts in Supercomputing and Cloud Computing. They'll give you an introduction to what Supercomputing and Cloud Computing is all about and lead you through the process of creating a virtual computer in the Cloud.

Software/Downloads:

Netlogo

Presenter: Bruce Segee, University of Maine

Platform(s): Apple MacBook Air, HP ProBook

Location: Little Hall, Room 130

This session will provide an introduction to the Netlogo programming environment. Netlogo is an agent-based programming language that can be easily learned by middle schoolers, but is used by University graduate students as well. This session is limited to machines with Netlogo installed.

Software/Downloads: Netlogo

Start Developing iOS and OS X Apps Today

Presenter: Tim Hart, Apple

Platform(s): Apple MacBook Air (*iPad participants are welcome if they are interested in developing iOS or OS X apps, however Xcode is an OS X only application and is needed to participate in the hands-ons parts of the session*)

Location: Shibles Hall, Room 202

Although the task of developing an app may seem daunting, the process can be reduced to several digestible steps. With so many wonderful technologies available to today's coder, there has never been a better time to pick up programming. This session will help you get started and guide you in the right direction as you develop your first app.

Software/Downloads: Xcode

Calling All Inventors - Start Programming with Arduino!

Presenter: Abby Stiers

Platform(s): HP ProBook, Apple MacBook

Location: Little Hall, Room 110

Would you like to build a device that senses when someone sneaks into your room and sends you a text message? How about a shirt with turn signal lights on the back, for riding your bike? People have built these and more with arduino microcontrollers.

A microcontroller is like a tiny portable (even washable) computer that can take information from any kind of sensor to control lights, motors and other electronics. Arduino microcontrollers come in all shapes and sizes and are designed to be easy to program so anyone can invent new devices. In this super fast-paced workshop, you will build a basic project, while learning concepts and skills necessary for designing and building more complex projects.

Software/Downloads: Arduino boards will be available for student use.

Using Filemaker to Build Relational Databases

Presenter: Curtis Armstrong, Apple

Platform(s): Apple MacBook Air

Block 2 Only!

Location: Boardman Hall, Room 210

In our data-driven world, we need to be able to take disparate chunks of data and relate them to each other. In this session, we will explore ways to use Filemaker to design, build and have some fun with relational databases. We'll take sample data and build a database, explore different layout options, build data input forms and look at different ways Filemaker could be used for personal organization as well.

Software/Downloads: FileMaker 13 Trial

Make That Cat Walk with Scratch

Presenter(s): Linus Obenhaus & Jon Graham, Oak Hill Middle School

Platform(s): HP ProBook, Apple MacBook Air

Block 2 only!

Location: Little Hall, Room 140

Scratch is a web-based application designed to introduce you to programming in an easy-to-learn and fun way, by organizing code into understandable blocks. You can do so much with Scratch. You can create games, animations, music, and almost anything you set your mind to. In this session, and experienced Scratch user will guide you through the processes of making your own project as well as building off of others' projects.

Software/Downloads: Scratch (free download - <http://scratch.mit.edu/scratch2download/>)

Scratch Day in Maine

Presenter(s): Jo Gates, Maine Mathematics and Science Alliance

Platform(s): HP ProBook, Apple MacBook Air

Location: D.P. Corbett, Room 117

What can you do with Scratch? Scratch is a fun, visual programming language. It's used to create interactive stories, games, and animations.

This Scratch session is for beginners to those who have some experience with Scratch. Have a story you want to tell? Want to learn to code? Do you want to make your own games? Interested in getting involved in an active, fun, awesome online community? Scratch can do that! We'll create a collaborative project, talk about some practical Scratch projects like virtual tours and informative guides, and share tips and methods to make your Scratch projects even better. We'll also share stories from the first Scratch Day events in Maine, held May 17, 2014.

Scratch is a project of the Lifelong Kindergarten Group at the MIT Media Lab. It is provided free of charge, and runs on laptops. A similar program, SNAP!, is available for tablets but will not be included in this session.

Software/Downloads: Scratch (free download - <http://scratch.mit.edu/scratch2download/>)